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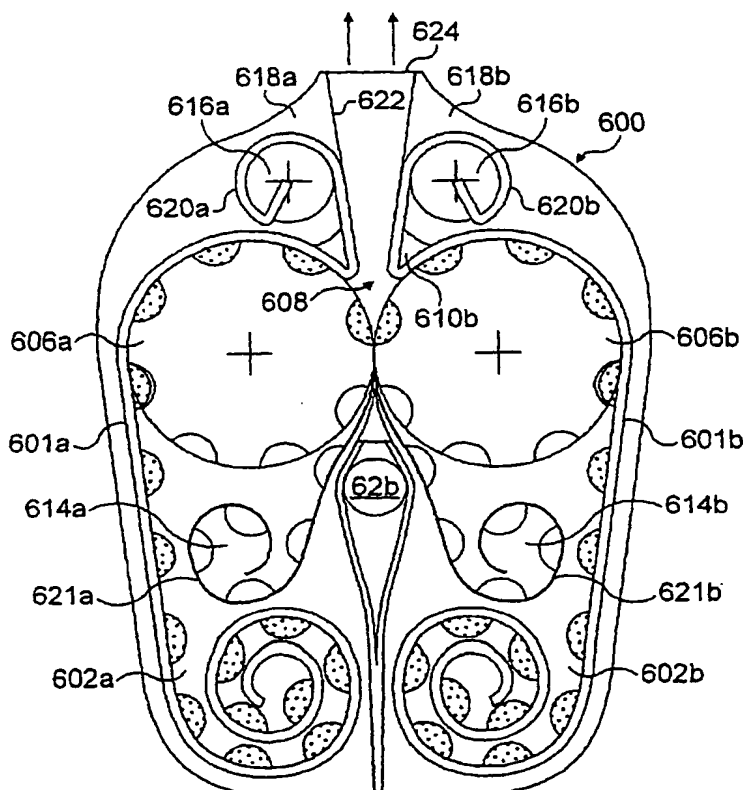
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(54) Title: **MEDICAMENT DISPENSER**



(57) Abstract: There is provided a medicament dispenser (600) for use with plural elongate form medicament carriers (601), each having multiple distinct medicament dose portions carried thereby, the dispenser (600) having a dispensing mechanism (620) for dispensing the distinct medicament dose portions carried by each of the plural medicament carriers (601). The mechanism comprises a receiving station (602) for receiving each of the plural medicament carriers; a release for releasing a distinct medicament dose portion from each of the plural medicament carriers on receipt thereof by the receiving station; an outlet (624), positioned to be in communication with the distinct medicament dose portions releasable by said a release (620); and an indexer (606) for individually indexing the distinct medicament dose portions of each of the plural medicament carriers (601).

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Claims

1. A medicament dispenser for use with plural elongate form medicament carriers, each having multiple distinct medicament dose portions carried thereby,  
5 said dispenser having a dispensing mechanism for dispensing the distinct medicament dose portions carried by each of said plural medicament carriers, said mechanism comprising;
- a) a receiving station for receiving each of the plural medicament carriers;
- 10 b) a release for releasing a distinct medicament dose portion from each of the plural medicament carriers on receipt thereof by said receiving station;
- c) an outlet, positioned to be in communication with the distinct medicament  
15 dose portions releasable by said release; and
- d) an indexer for individually indexing the distinct medicament dose portions of each of the plural medicament carriers.
- 20 2. A medicament dispenser according to claim 1 for use with from two to four elongate form medicament carriers.
3. A medicament dispenser according to either of claims 1 or 2, wherein a common receiving station receives each of the plural medicament carriers.
- 25 4. A medicament dispenser according to either of claims 1 or 2, comprising plural distinct receiving stations each for receiving a single medicament carrier.
5. A medicament dispenser according to any of claims 1 to 4, wherein said  
30 release comprises means to access medicament carried by said medicament carrier by a rupturing, puncturing, tearing or peeling action.

6. A medicament dispenser to claim 5, wherein said release comprises a peeler for peeling apart a peelable blister strip form medicament carrier.
- 5 7. A medicament dispenser according to any of claims 1 to 6, wherein said outlet is a single common outlet, which communicates with the distinct medicament dose portions on their release.
8. A medicament dispenser according to claim 7, wherein said common outlet is  
10 shaped to encourage mixing of said released medicament dose portions.
9. A medicament dispenser according to any of claims 1 to 8, wherein a single indexer indexes each of the plural medicament carriers.
- 15 10. A medicament dispenser according to any of claims 1 to 8, comprising plural distinct indexers each for indexing a single medicament carrier.
11. A medicament dispenser according to claim 10, wherein said plural distinct indexers are mutually coupled.
- 20 12. A medicament dispenser according to claim 1, for use with plural blister strip form medicament carriers, each having multiple distinct pockets for containing medicament dose portions, wherein said pockets are spaced along the length of and defined between two peelable sheets secured to each other, said dispenser having a  
25 dispensing mechanism for dispensing the medicament dose portions contained within said plural medicament carriers, said mechanism comprising,
- a) an opening station for receiving a pocket of each of said medicament carriers;

- b) a peeler positioned to engage a base sheet and a lid sheet of a pocket which has been received in said opening station for peeling apart such a base sheet and lid sheet, to open such a pocket;
- 5 c) an outlet, positioned to be in communication with an opened pocket through which a user can access a medicament dose portion from such an opened pocket; and
- d) an indexer for individually indexing the distinct pockets of each of the plural  
10 medicament carriers.
13. A medicament dispenser according to claim 12, for use with from two to four blister strips.
- 15 14. A medicament dispenser according to either of claims 12 or 13, wherein a common opening station receives each of the plural blister strips.
15. A medicament dispenser according to either of claims 12 or 13, comprising plural distinct opening stations each for receiving a single blister strip.  
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16. A medicament dispenser according to any of claims 12 to 15, wherein said opening station is movable within the dispenser.
17. A medicament dispenser according to claim 16, wherein said movable  
25 opening station comprises a chamber that in use, moves to locate adjacent said opened pocket of each said plural blister strips.
18. A medicament dispenser according to claim 17, wherein said chamber is provided to a carrier that is movably mountable along a sprung axis.  
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19. A medicament dispenser according to any of claims 12 to 18, wherein each blister strip is acted on by common peeler.

20. A medicament dispenser according to any of claims 12 to 18, wherein each  
5 blister strip is acted on by a distinct peeler.

21. A medicament dispenser according to any of claims 12 to 20, wherein said peeler includes a lid driver for pulling apart said lid sheet and said base sheet of a pocket that has been received at the opening station.

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22. A medicament dispenser according to claim 21, wherein the lid driver comprises a wheel on which the lid sheet is wound up, said wheel being arranged to progressively collapse as the lid sheet becomes wound around it to provide an overall approximately constant effective winding diameter.

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23. A medicament dispenser according to either of claims 21 or 22, additionally comprising control means to control the movement of said lid driver, in order to control the length of blister strip peeled thereby.

20 24. A medicament dispenser according to claim 23, wherein said control means comprises a clutch.

25. A medicament dispenser according to any of claims 21 to 24, additionally comprising compensating means to compensate for any variation in the pulling  
25 tension of the lid driver.

26. A medicament dispenser according to claim 25, wherein said compensating means has the form of a flexible member positioned between said opening station and said lid driver.

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27. A medicament dispenser according to claim 26, wherein said flexible member comprises a variable length spring.

28. A medicament dispenser according to claim 25, wherein the compensating  
5 means comprises a torsion spring mountable at the lid driver.

29. A medicament dispenser according to any of claims 12 to 28, additionally comprising a guide for guiding the lid sheet and base sheet along separate paths subsequent to their peeling apart.

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30. A medicament dispenser according to any of claims 12 to 29, wherein said indexer comprises a rotatable index wheel having plural blister pocket-engaging recesses provided thereto.

15 31. A medicament dispenser according to any of claims 12 to 30, additionally comprising chambers for housing said plural medicament carriers prior to opening, and the lid sheet and base sheet components thereof subsequent to opening.

32. A medicament dispenser according to any of claims 1 to 31, wherein any or all  
20 components of the dispensing mechanism are drivable by an electronic drive system.

33. A medicament dispenser according to any of claims 1 to 32, additionally comprising an electronic data management system.

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34. A medicament dispenser according to any of claims 1 to 33, in reloadable form.

35. A medicament dispenser according to claim 34, comprising a body; a holder,  
30 shaped to fit within said body and movable relative to said body; and receivable by said holder, a reload cassette containing plural elongate form medicament carriers.

36. A medicament dispenser according to either of claims 34 or 35 in kit of parts form.

5 37. A medicament dispenser according to any of claims 1 to 36, comprising plural elongate form medicament carriers, each having multiple distinct dose portions carried thereby.

38. A medicament dispenser according to claim 37, wherein said multiple distinct  
10 dose portions are arranged in series progression on the carrier such that each dose portion is separately accessible.

39. A medicament dispenser according to either of claims 37 or 38, wherein each medicament carrier is in the form of a strip or tape.

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40. A medicament dispenser according to any of claims 37 to 39, wherein each medicament carrier is in the form of a blister pack.

41. A medicament dispenser according to claim 40, wherein said blister pack form  
20 medicament carrier comprises a peelable blister strip.

42. A medicament dispenser according to claim 41, wherein said peelable blister strip comprises a base sheet in which blisters are formed to define pockets therein for containing distinct medicament dose portions and a lid sheet that is hermetically  
25 sealable to the base sheet except in the region of the blisters in such a manner that the lid sheet and the base sheet can be peeled apart.

43. A medicament dispenser according to claim 42, wherein said lid sheet comprises at least the following successive layers: (a) paper; adhesively bonded to  
30 (b) polyester; adhesively bonded to (c) aluminium foil; that is coated with a heat seal lacquer for bonding to the base sheet.

44. A medicament dispenser according to either of claims 42 or 43, wherein the base sheet comprises at least the following successive layers: (a) oriented polyamide (OPA); adhesively bonded to (b) aluminium foil; adhesively bonded to (c) a third layer comprising a polymeric material.
45. A medicament dispenser according to any of claims 37 to 44, wherein each medicament carrier is sized and shaped to carry equivalent dose portions.
46. A medicament dispenser according to any of claims 37 to 44, wherein each medicament carrier is sized and shaped to carry non-equivalent dose portions.
47. A medicament dispenser according to any of claims 37 to 46, wherein the multiple distinct dose portions of each medicament carrier are uniformly spaced.
48. A medicament dispenser according to any of claims 37 to 46, wherein the multiple distinct dose portions of each medicament carrier are arranged such that the spacing between each dose portion progressively increases.
49. A medicament dispenser according to any of claims 37 to 48, wherein the spacing of the multiple distinct dose portions is equivalent for each medicament carrier.
50. A medicament dispenser according to any of claims 37 to 48, wherein the spacing of the multiple distinct dose portions is non-equivalent for each medicament carrier.
51. A medicament dispenser according to claim 50, comprising two medicament carriers wherein the spacing between distinct dose portions of a first medicament carrier is double that of the spacing between distinct dose portions of a second medicament carrier.



52. A medicament dispenser according to any of claims 37 to 51, wherein the medicament carriers are arranged in the dispenser in 'side-by-side' configuration.

5 53. A medicament dispenser according to any of claims 37 to 51, wherein the medicament carriers are arranged in the dispenser in 'double-decker' configuration.

54. A medicament dispenser according to any of claims 37 to 51, wherein the medicament carriers are arranged in the dispenser in 'back-to-back' configuration.

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55. A medicament dispenser according to any of claims 37 to 54, wherein the plural elongate form medicament carriers are comprised as a single conjoined carrier comprising plural series of multiple distinct medicament dose portions arranged thereon.

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56. A medicament dispenser according to claim 55 wherein the plural series of multiple distinct medicament dose portions are arranged parallel to each other.

57. A medicament dispenser according to any of claims 37 to 56, wherein each  
20 medicament carrier has the form of a continuous loop.

58. A medicament dispenser according to claim 57, wherein the medicament carrier is in the form of a peelable strip comprising a base sheet and a lid sheet peelably secureable thereto, and the base sheet is formed as a continuous loop.

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59. A medicament dispenser according to claim 58, wherein the lid sheet is in the form of a continuous loop.

60. A medicament dispenser according to claim 58, wherein the lid sheet is in the  
30 form of a strip.

61. A medicament dispenser according to any one of claims 37 to 60, wherein the each medicament carrier carries distinct medicament dose portions in powdered or solid form.

5 62. A medicament dispenser according to claim 61, wherein each medicament dose portion of each medicament carrier comprises a single active medicament component.

63. A medicament dispenser according to claim 62, wherein said single active  
10 medicament components are selected from the group consisting of albuterol, salmeterol, fluticasone propionate, formoterol, budesonide and beclomethasone dipropionate and salts or solvates thereof.

64. A medicament dispenser according to claim 62, comprising two medicament  
15 carriers wherein each medicament dose portion of a first medicament carrier comprises a bronchodilator as the active medicament component and each medicament dose portion of a second medicament carrier comprises an anti-inflammatory as the active medicament component.

20 65. A medicament dispenser according to claim 64, wherein said bronchodilator is a beta-agonist and said anti-inflammatory is a steroid.

66. A medicament dispenser according to claim 61, wherein each medicament  
25 dose portion of at least one medicament carrier comprises plural active medicament components.

67. A medicament dispenser according to claim 66, comprising two medicament  
carriers wherein each medicament dose portion of a first medicament carrier  
comprises a single active medicament component and each medicament dose  
30 portion of a second medicament carrier comprises plural active medicament  
components.

68. A medicament dispenser according to claim 67, wherein said plural active medicaments comprise a bronchodilator and an anti-inflammatory.

5 69. A medicament dispenser according to claim 68, wherein said bronchodilator is a beta-agonist and said anti-inflammatory is a steroid.

70. Use of a medicament dispenser according to any of claims 1 to 69 for dispensing a combination medicament product.

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